

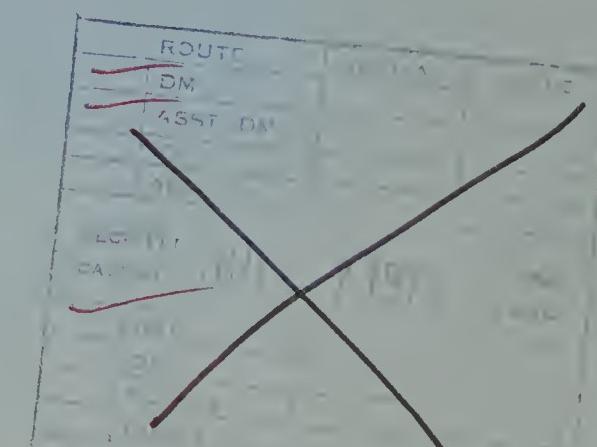
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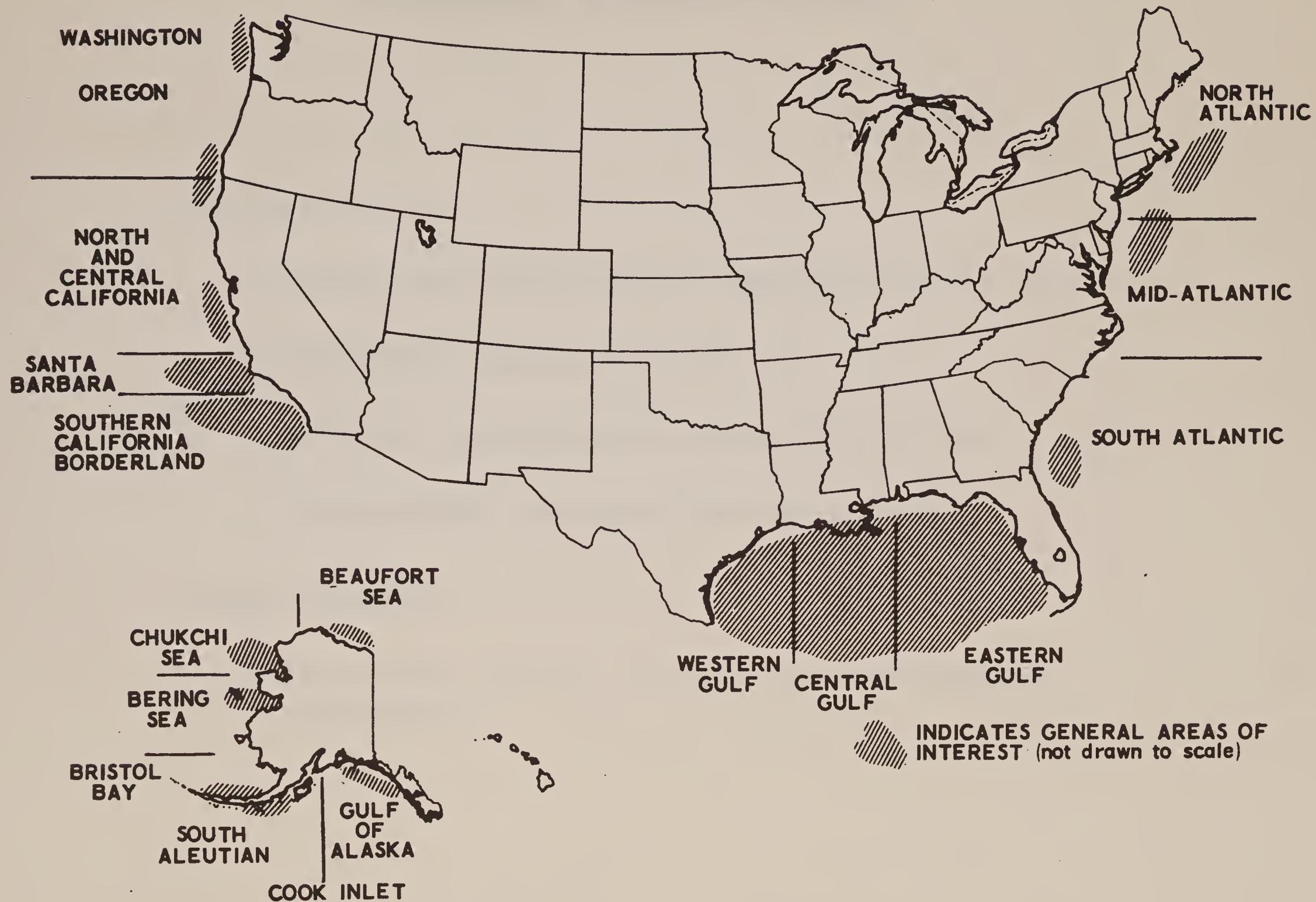
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OCS Regions of Interest for Oil Gas Exploration



Program Authorization

LEGISLATIVE ACTS

- OUTER CONTINENTAL SHELF LANDS ACT (67-STAT 462)
- SUBMERGED LANDS ACT (67-STAT 29)
- NATIONAL ENVIRONMENTAL POLICY ACT OF 1969
- CONGRESSIONAL APPROPRIATIONS BILL (FY 1975)

OTHER DOCUMENTS

- CEQ REPORT "OCS OIL AND GAS - AN ENVIRONMENTAL ASSESSMENT"

BLM Outer-Continental Shelf Environmental Studies Program

OBJECTIVES

- PROVIDE INFORMATION ABOUT THE OCS ENVIRONMENT THAT WILL ENABLE THE DEPARTMENT AND THE BUREAU TO MAKE SOUND MANAGEMENT DECISIONS REGARDING THE DEVELOPMENT OF MINERAL RESOURCES.
- BASIS FOR PREDICTING IMPACT OF OIL AND GAS EXPLORATION AND DEVELOPMENT ON THE MARINE ENVIRONMENT
- ESTABLISH A BASIS FOR PREDICTION OF IMPACT OF OCS OIL AND GAS ACTIVITIES IN FRONTIER AREAS
- PROVIDE IMPACT DATA THAT WOULD RESULT IN MODIFICATION OF LEASING REGULATIONS, OPERATING REGULATIONS, OR OPERATING ORDERS

BLM Outer-Continental Shelf Environmental Studies Program

APPROACH

- ESTABLISH ENVIRONMENTAL BASE LINE IN SELECTIVE OCS REGIONS PRIOR TO OIL/GAS EXPLORATION
 - INPUT TO OCS ENVIRONMENTAL IMPACT STATEMENT
 - AID IN TRACT SELECTION AND PIPELINE CORRIDOR SELECTION
 - CRITERIA AND LEASE STIPULATIONS
- CONDUCT ENVIRONMENTAL MONITORING DURING OIL/GAS EXPLORATION AND PRODUCTION TO DETECT CHANGES
 - PROVIDE A BASIS FOR EARLY CORRECTIVE MEASURES
 - MEASURE EFFECT OF OIL/GAS EXPLORATION AND PRODUCTION
 - CRITERIA FOR DETERMINING SIGNIFICANT CHANGE
- CONDUCT SPECIAL STUDIES, i.e. SPILL TRAJECTORIES, SOCIO-ECONOMIC IMPACT, TOXICITY, etc

Regions / Tracts for Lease Consideration

17 REGIONS OCS OF INTEREST FOR OIL/GAS EXPLORATION

- NORTH ATLANTIC
- MID ATLANTIC
- SOUTH ATLANTIC
- EASTERN GULF (MAFLA)
- CENTRAL GULF
- SOUTH TEXAS GULF
- SOUTHERN CALIFORNIA BORDERLAND
- SANTA BARBARA/ CENTRAL CALIFORNIA
- NORTHERN CALIFORNIA

- NORTH PACIFIC - OREGON/WASHINGTON
- GULF OF ALASKA
- COOK INLET
- SOUTHERN ALEUTIAN SHELF
- BRISTOL BAY
- BERING SEA
- CHUKCHI SEA
- BEAUFORT SEA

BLOCK A" REGIONS/TRACTS

- MAFLA
- SO. TEXAS GULF
- SOUTHERN CALIF.
- GULF ALASKA
- MID ATLANTIC

"B"

"C"

"D"

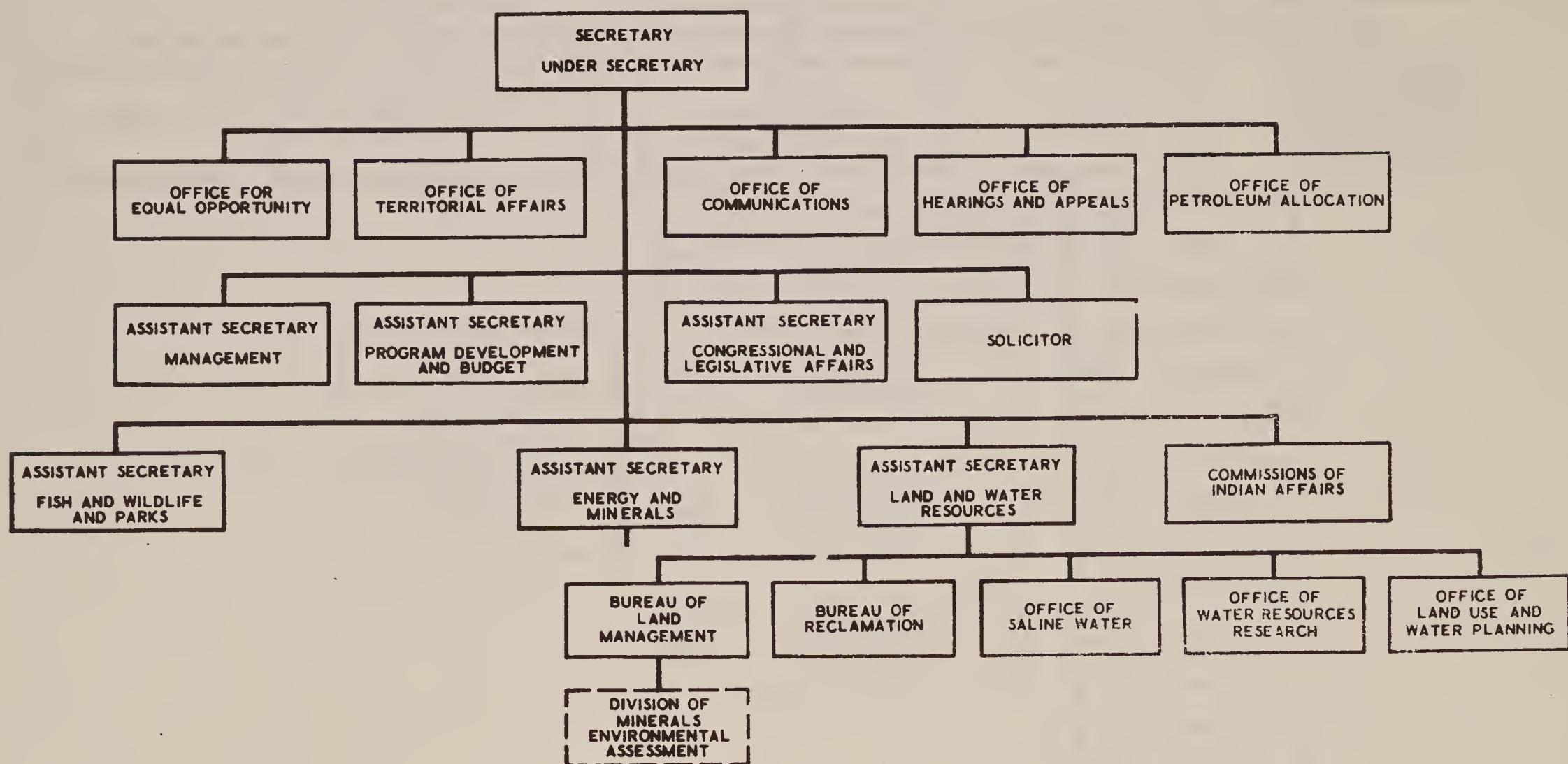


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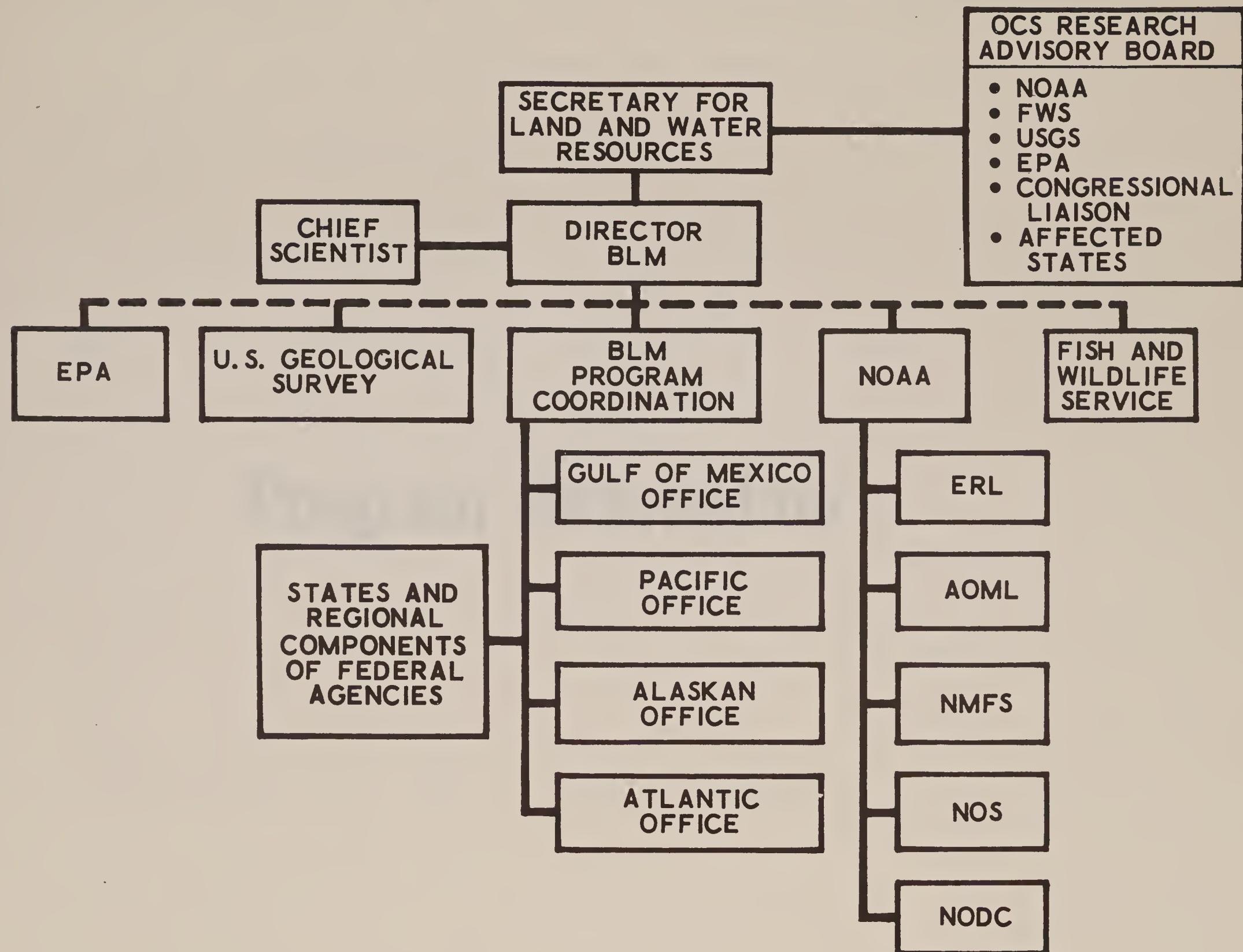
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Management Plan

General Organization of the United States Department of the INTERIOR



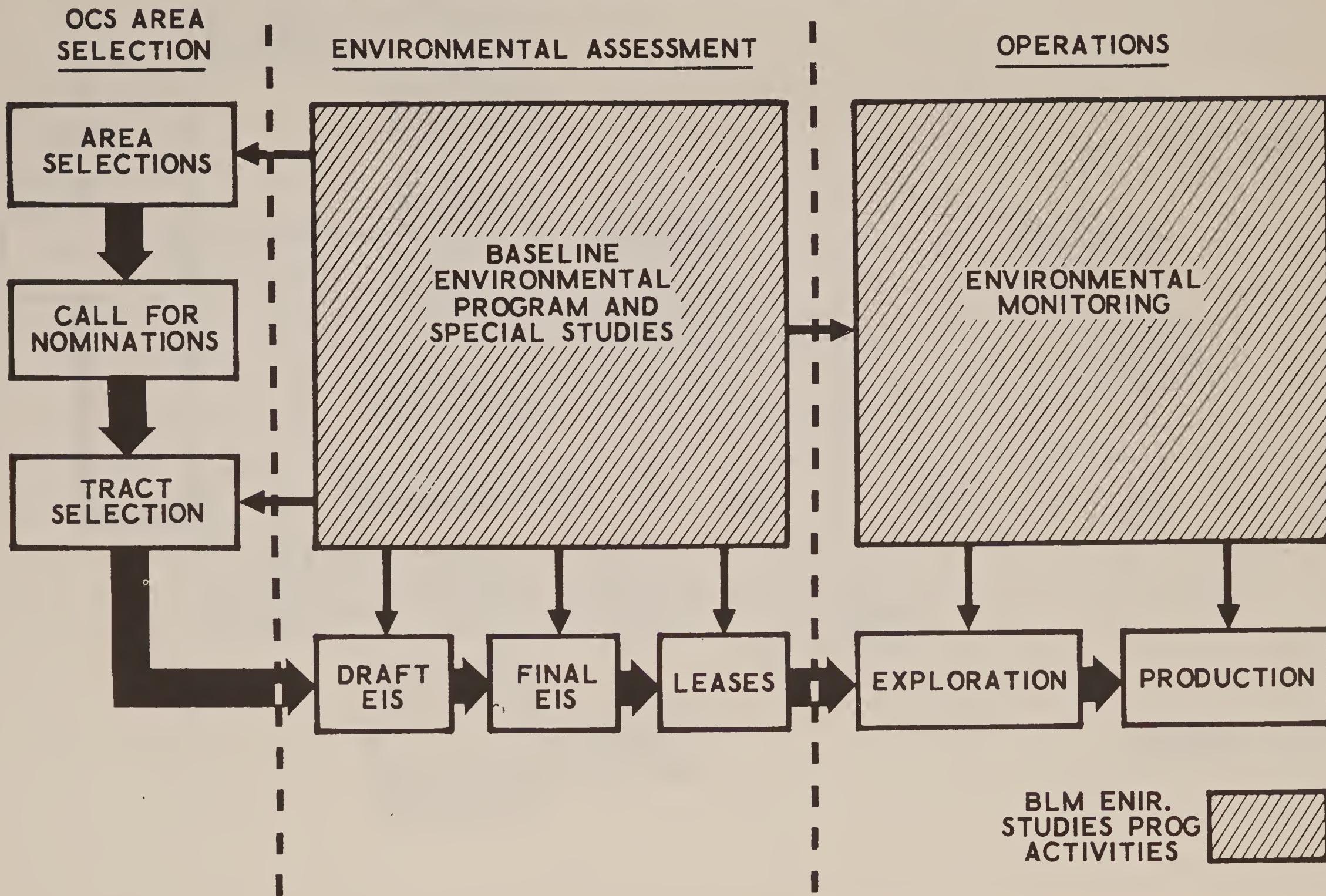
Functional Program Management Structure



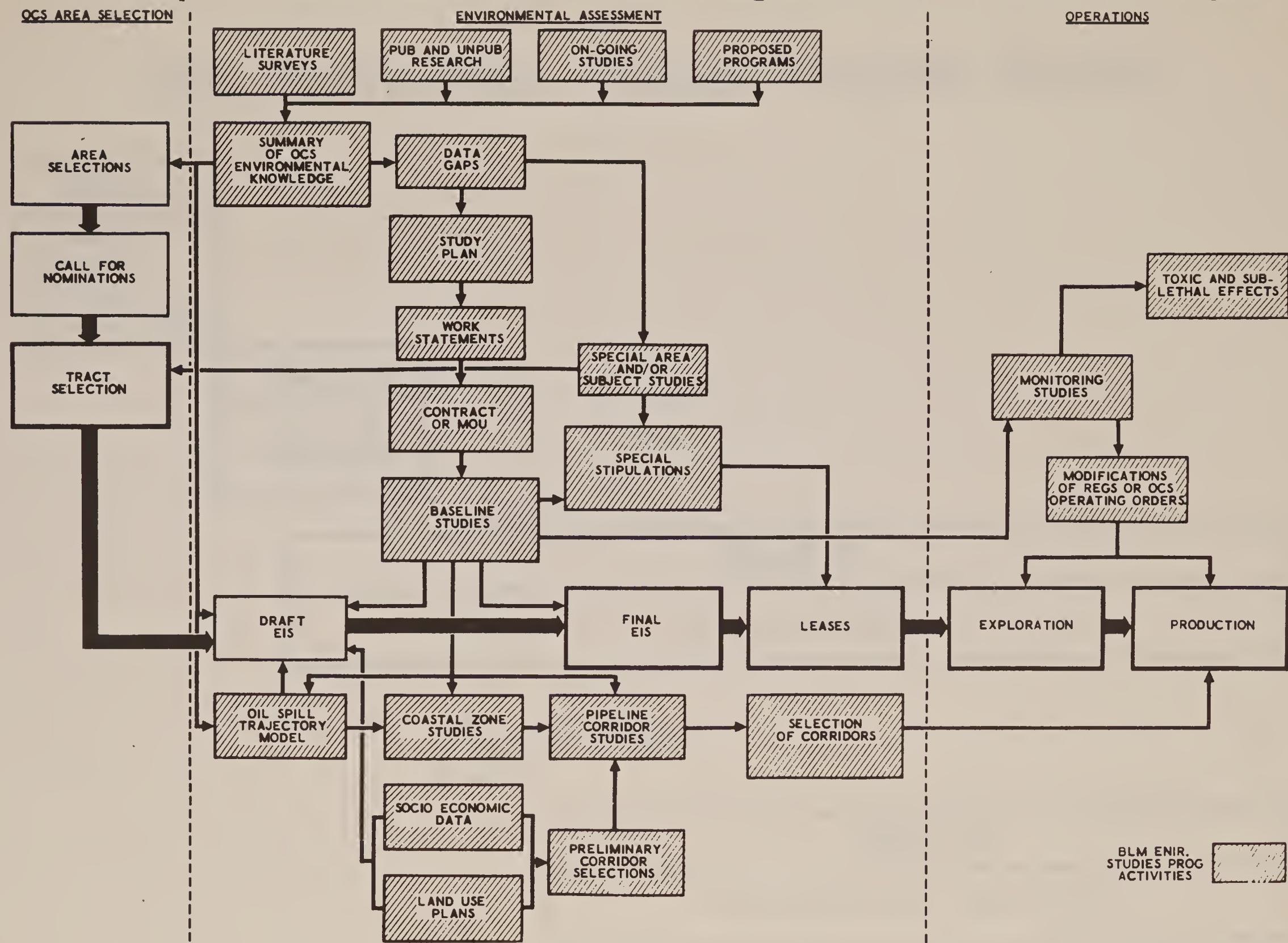
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Program Description

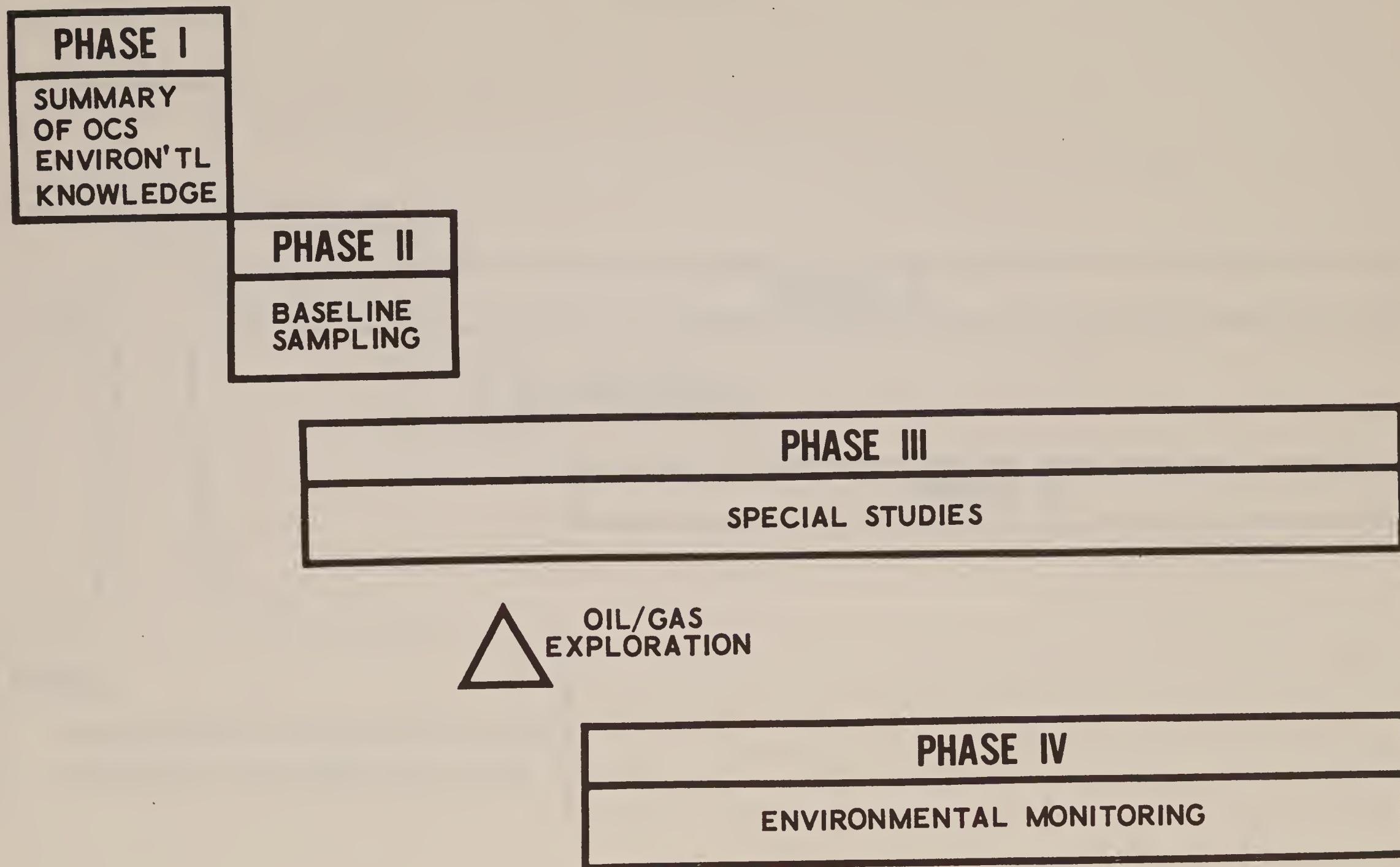
Relationship of BLM Environmental Studies Program to OCS Minerals Development



Relationship of BLM Environmental Studies Program to OCS Minerals Development

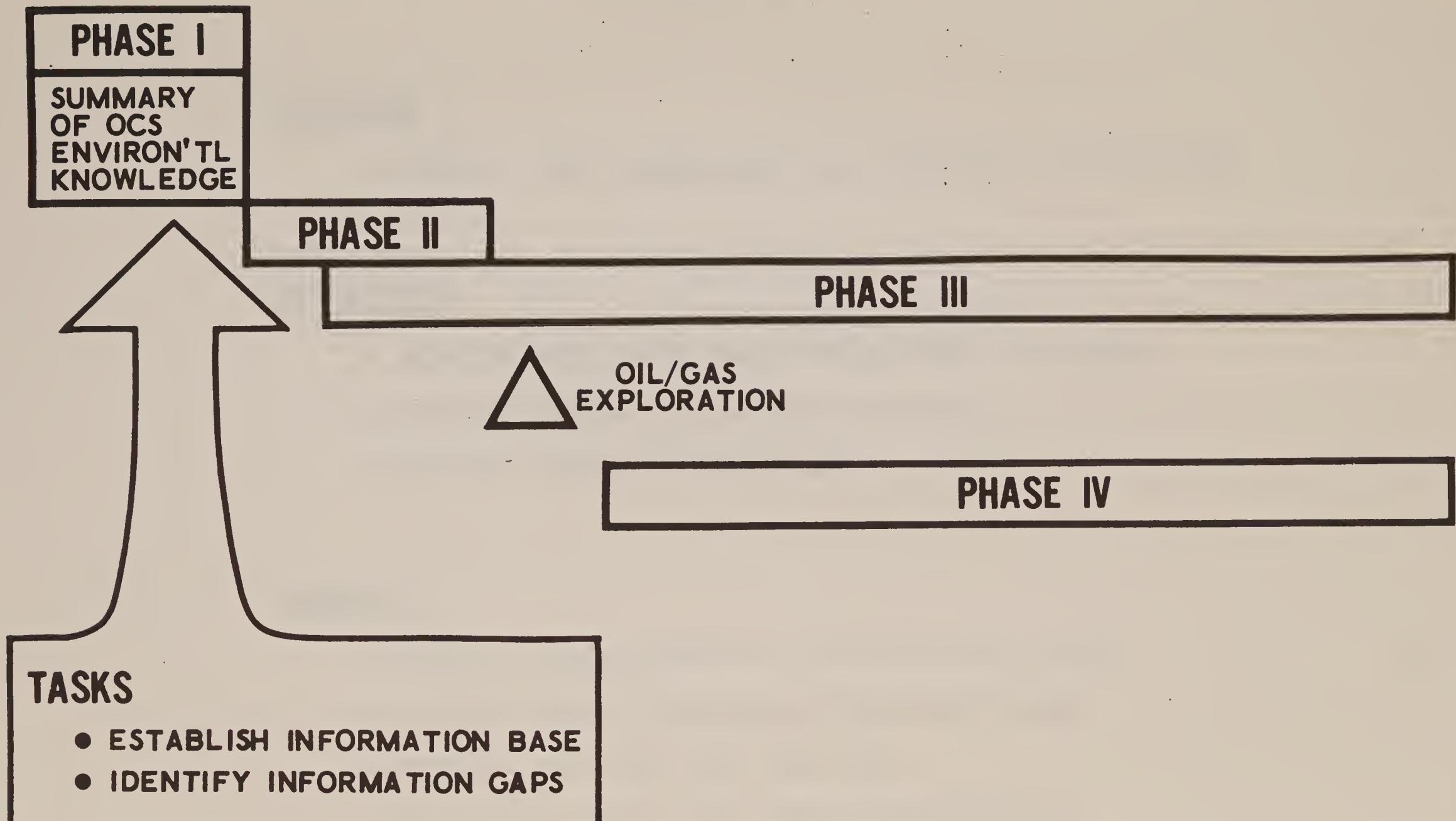


OCS Environment Studies Program Phases



OCS Environmental Studies Program

PHASE I



Summary of OCS Environmental Knowledge

PURPOSE

- COMPILE AND SUMMARIZE ALL EXISTING INFORMATION

APPROACH

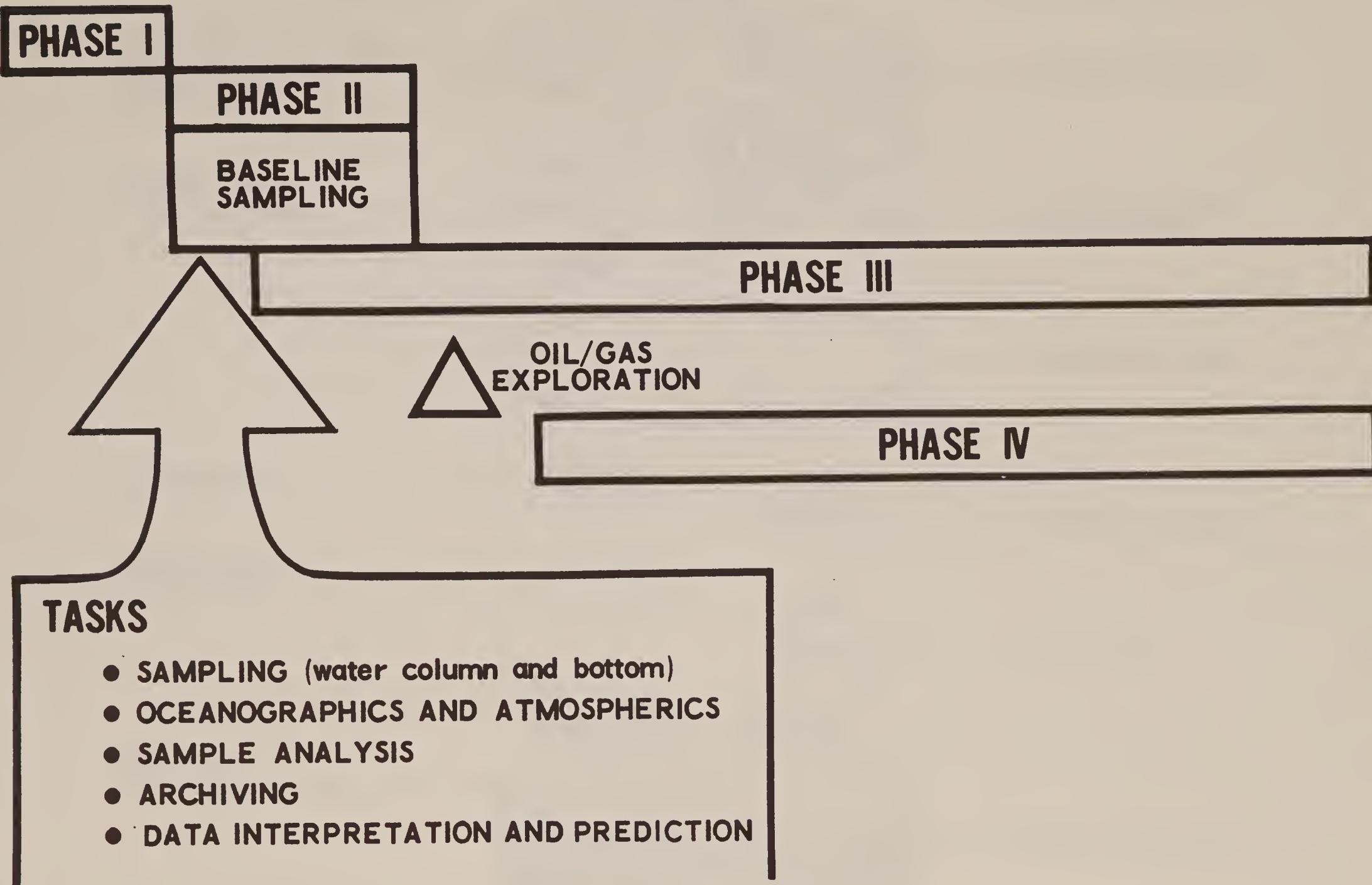
- REVIEW PUBLISHED AND UNPUBLISHED RESEARCH
- REVIEW ONGOING RELATED ACTIVITIES
- REVIEW PROPOSED PROGRAMS

BENEFITS

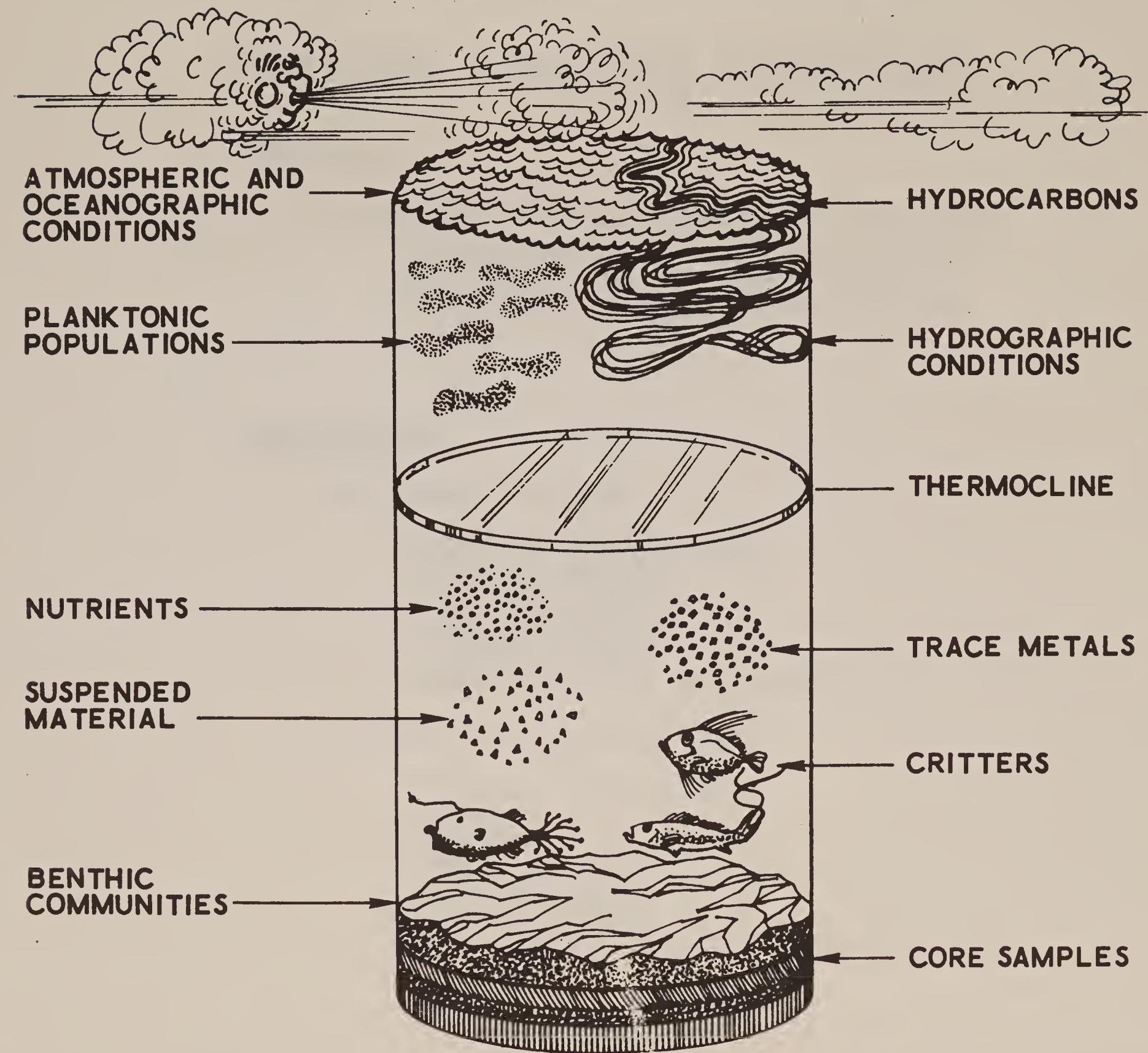
- IDENTIFY ENVIRONMENTAL INFORMATION GAPS
- PROVIDE BASIS FOR STUDY PROGRAM DESIGN
- PROVIDE INFORMATION FOR EIS
- ADDITIONAL INPUT TO THE ENVIRONMENTAL DATA BANK

OCS Environmental Studies Program

PHASE II



OCS Baseline Sampling



Baseline Sampling Philosophy

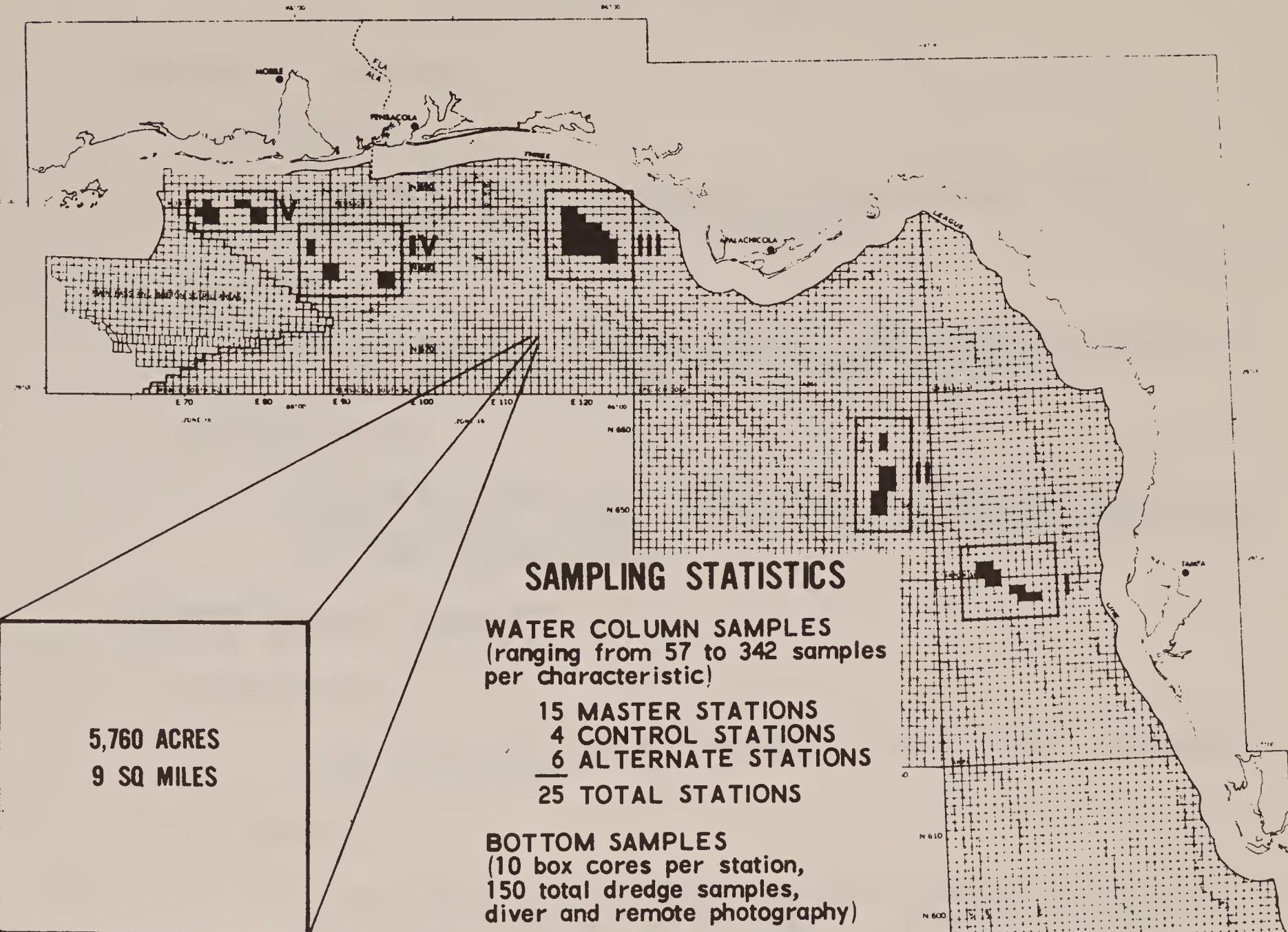
RATIONALE

- PROVIDE COMPREHENSIVE DATA BASE FOR:
ESTABLISHMENT OF PREDEVELOPMENT
OCS CONDITIONS AND PREDICTION OF
POTENTIAL ENVIRONMENTAL IMPACTS

PROCEDURES

- BOTTOM SAMPLING
 - BENTHIC COMMUNITIES
 - TOTAL BIOMASS
 - SPECIES DIVERSITY
 - TRACE METALS
 - HYDROCARBONS
 - SEDIMENT TYPE AND STRUCTURE
- WATER COLUMN SAMPLING
 - PELAGIC POPULATION
 - BIOMASS
 - TAXONOMY
 - TRACE METALS
 - HYDROCARBONS
 - MICRONUTRIENTS
 - OXYGEN, pH, SALINITY, TEMPERATURE

Sampling of MAFLA Tracts



Sample Analysis

SEDIMENT SAMPLES

- BIOLOGICAL
 - CLASSIFICATION OF BENTHIC COMMUNITIES, TOTAL BIOMASS, AND SPECIES DIVERSITY
- CHEMICAL
 - TRACE METAL, HYDROCARBON, AND MICRONUTRIENT DETERMINATIONS FOR BIOTA AND SEDIMENTS
- GEOLOGICAL
 - SEDIMENT TYPE AND STRUCTURE DETERMINATIONS; SEEPS, MUD LUMPS, FAULTS, etc, IDENTIFICATION FOR HAZARD PREDICTION

WATER MASS SAMPLES

- BIOLOGICAL
 - CLASSIFICATION OF PLANKTONIC POPULATION, BIOMASS AND TAXONOMY
- CHEMICAL
 - TRACE METAL AND HYDROCARBON CONCENTRATIONS IN SOLUTION AND IN PARTICULATE; MICRONUTRIENTS, DISSOLVED OXYGEN, pH, AND SALINITY MONITORING
- HYDROGRAPHIC
 - WATER MASS STRUCTURE AND VARIATIONS; SEVERE CONDITIONS

Potential Effects of OCS Operations* on the Offshore Environment

POTENTIAL IMPACTS	SIGNIFICANCE
BIOLOGICAL	
1. DISRUPTION OR ALTERATION OF MARINE HABITATS	1. REDISTRIBUTION OF COMMERCIAL OR SPORT FISH POPULATION
2. OILING OR LETHAL EFFECTS OF SPILLS	2. DISTRIBUTION OF BIRDS AND MAMMALS
3. TOXIC AND SUBLETHAL EFFECTS ON MARINE ORGANISMS FROM CHRONIC POLLUTION	3. DISRUPTION OF FOOD WEB; CONCENTRATION OF TOXIC FRAC- TION THROUGH FOOD WEB
4. LOSS OF UNIQUE ENVIRONMENTS	4. LOSS OF RECREATIONAL RESOURCES
NON-BIOLOGICAL	
1. NAVIGATION HAZARDS	1. HAZARDS TO COMMERCIAL SHIPPING, SPORT FISHING CRAFT, FISHERMAN
2. MULTIPLE USE CONFLICTS	2. EXCLUSION OF AREAS FOR COMMERCIAL FISHING INTERESTS
3. DAMAGE TO ARCHAEOLOGICAL SITES	3. LOSS OF SITES WITH AESTHETIC HISTORICAL OR RECREATIONAL VALUE

* Drilling, Platform and Pipeline Construction, Oil and Gas Recovery

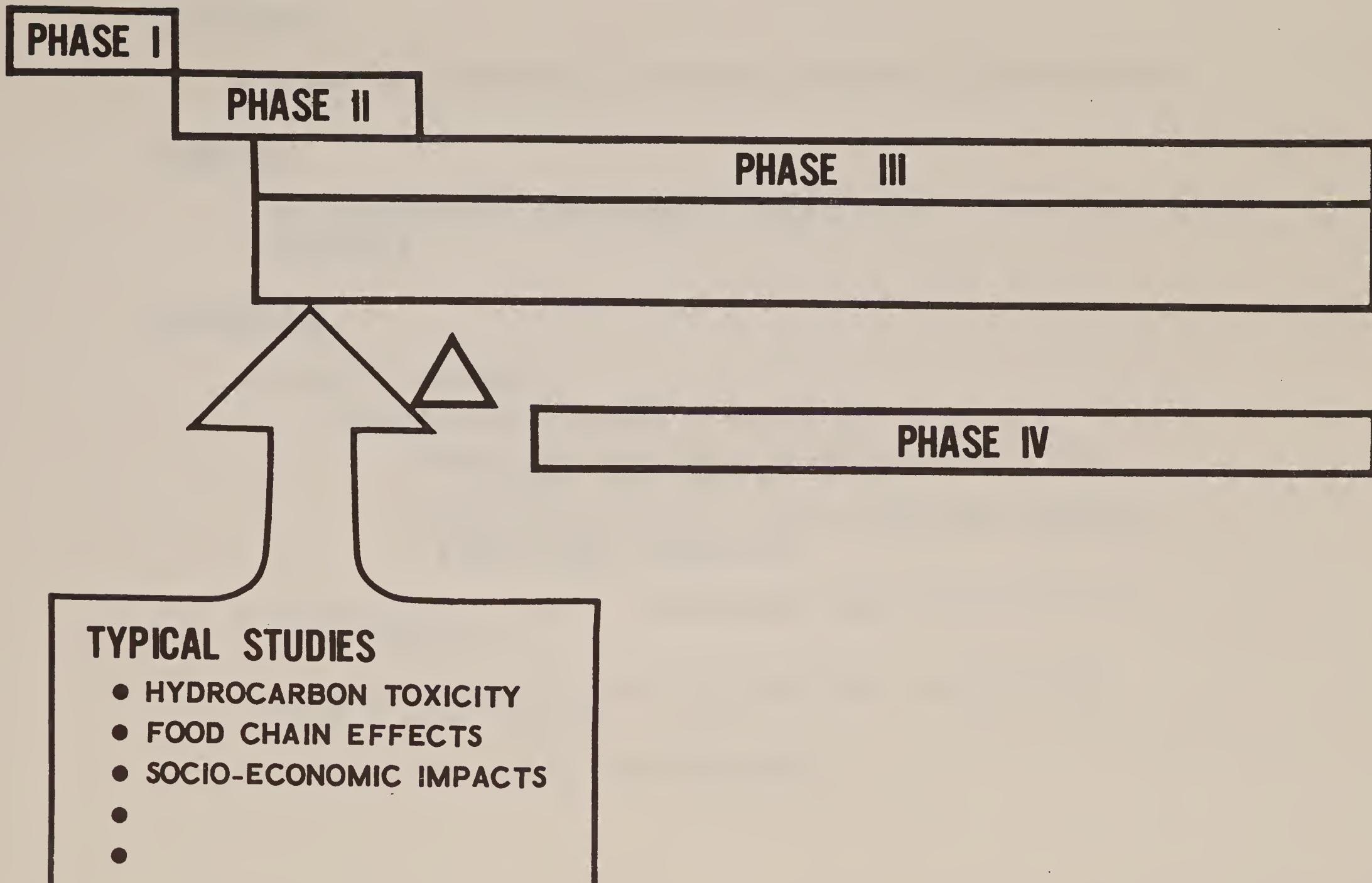
Potential Effects of OCS Related Operations on the Near Shore Environment*

IMPACT	SIGNIFICANCE
BIOLOGICAL	
1. DISRUPTION OF NEAR SHORE, AND ESTAURINE HABITAT AND ECOSYSTEMS	1. NEAR SHORE AREA IS NURSERY FOR 60% OF COMMERCIAL FISH
2. DISRUPTION OF FEEDING AND BREEDING OF BIRDS, FISH, REPTILES AND MAMMALS IN INTERTIDAL ZONE	2. LOSS OF SHELL FISH BEDS
3. DECREASE IN PRIMARY AND SECONDARY PRODUCTIVITY	3. POSSIBLE INTERRUPTION OF ANADROMOUS FISH MIGRATION
4. DISRUPTION OF NATURAL DRAINAGE AND WATER CURRENT PATTERNS	4. DECREASE OF FRESH WATER SUPPLIES
5. TOXIC AND SUBLETHAL EFFECTS ON MARINE ORGANISMS FROM CHORNIC POLLUTION	5. LOSS OF SPECIES DIVERSITY
6. OILING OR LETHAL EFFECTS OF SPILLS	6. CHANGE OF AQUATIC ENVIRONMENT LEADING TO POPULATION REDISTRIBUTION DISRUPTION OF FOOD WEB CONCENTRATION OF TOXIC FRACTIONS THRU FOOD CHAIN
NON-BIOLOGICAL	
1. BEACH DAMAGE	1. LOSS OF RECREATION VALUE
2. NAVIGATION HAZARD	2. HAZARDS FOR SMALL CRAFT (fishing boats, shipping)
3. AESTHETIC DEGRADATION	3. POSSIBLE EROSIONAL OR SILTATION PROBLEM
4. DAMAGE TO ARCHAEOLOGICAL OR OTHER CULTURAL RESOURCES	4. LOSS OF AESTHETIC OR CULTURAL RESOURCES

* Dredging, Pipeline Filling and Onshore Facility Construction, Super Tanker Operations, Oil Spills

OCS Environmental Studies Program

PHASE III



Special Studies

DEFINITION

- STUDY OF PROCESSES, DYNAMICS, CAUSAL RELATIONSHIPS

PURPOSE

- TO UNDERSTAND AND ENABLE PREDICTION OF ENVIRONMENTAL EFFECTS

EXAMPLES

- TOXICITY STUDIES
 - ACUTE AND CHRONIC EFFECTS OF:
 - DRILLING EFFLUENT, WASTE DISPOSAL, OIL LEAKAGE, OIL SPILLS
 - CONCENTRATION OF TOXIC FRACTION THROUGH FOOD CHAIN TRANSFER
- TRAJECTORY STUDIES - MOVEMENT AND DISPERSION OF CONTAMINANTS
- SOCIO-ECONOMIC EFFECTS ON INDUSTRY, RECREATION, PUBLIC HEALTH, etc
- STUDIES OF UNIQUE ENVIRONMENTS

OCS Environmental Studies Program

PHASE IV

PHASE I

PHASE II

PHASE III



PHASE IV

ENVIRONMENTAL MONITORING

TASKS

- SAMPLING (rig, area & control stations)
- RECOMMEND CORRECTIVE MEASURES TO OPERATIONS
- REVISE AND UPGRADE SAMPLING

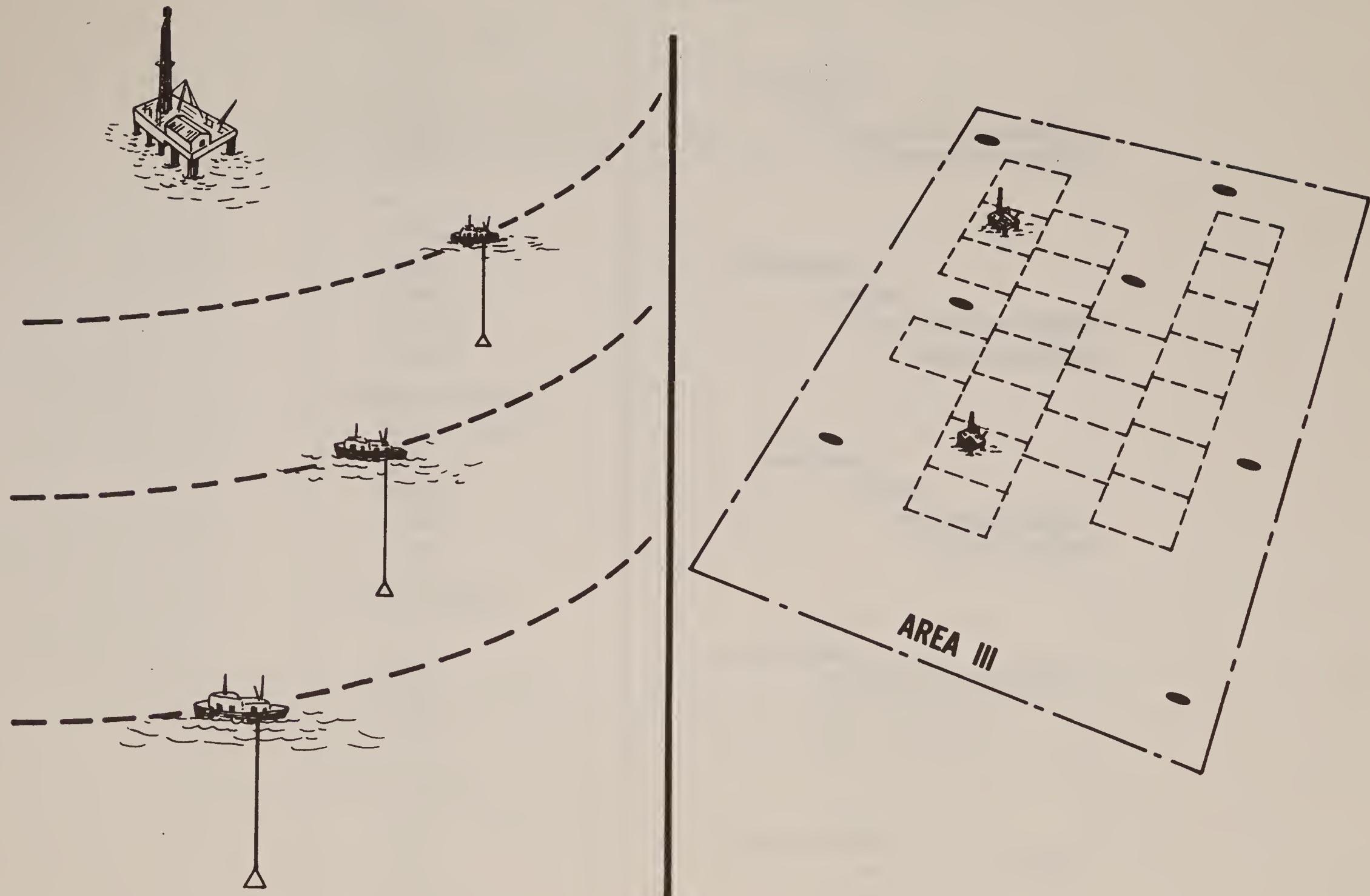
OCS Environmental Monitoring Effects of Oil/Gas Operations Requiring Assessment

NEED TO KNOW EFFECTS OF:

- DISCHARGE OF DRILLING MUDS
- PRODUCED FORMATION WATERS
- DISPOSAL OF DRILL CUTTINGS
- CHRONIC LEAKAGE OF PETROLEUM AND PRODUCTS FROM
 - PLATFORMS
 - WORKBOATS
- DISCHARGE OF WASTES FROM PLATFORMS AND WORKBOATS
- PLATFORM PLACEMENT

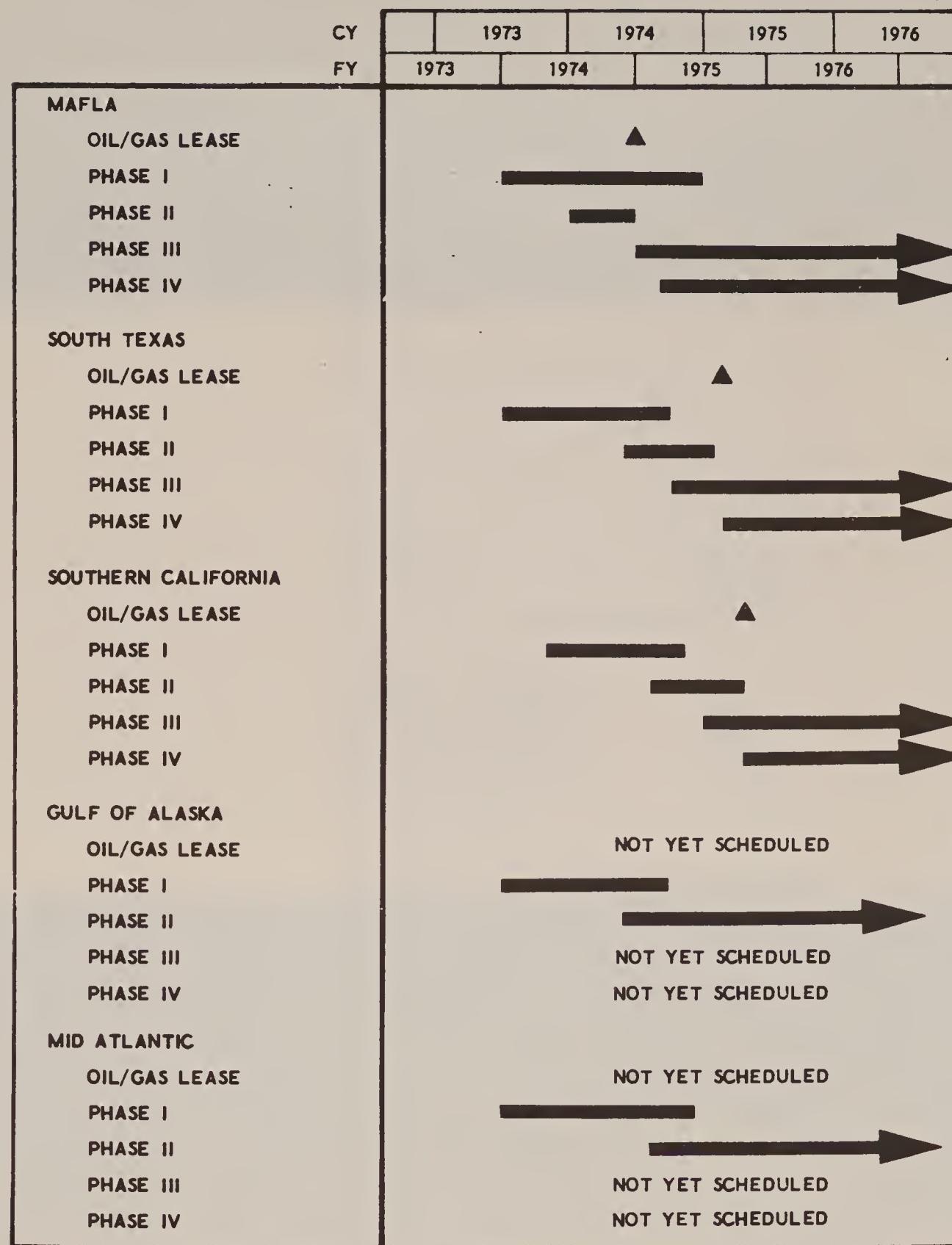
OCS Environmental Monitoring

TYPICAL SAMPLING SCHEME



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